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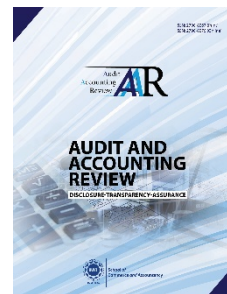
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Relationship of Cash Dividend Disbursement and Retained Earnings with Stock Price Volatility - A Case Study of Selected Non-Financial Firms of Pakistan

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Abstract

The prime objective of the current study is to determine the relationship between corporate dividend policy and retained earnings and its impact on stock price volatility. The impact of corporate dividend policy and retained earnings on stock price volatility has been debated and discussed variously over the course of the last five decades. Past researches showed mixed evidences of this relationship and the results remained inconclusive. Moreover, in this regard, only a few studies have been conducted in Pakistan. So, it remains undecided whether the relationship exists or not and further study is required to establish or refute its existence. For this purpose, modern statistical techniques and tools available for analyzing the data were used. Data from a total of 75 companies was initially collected and scrutinized according to different parameters mentioned in the study. Only 50 companies from year 2010 to 2018 were left to be analyzed as the data was not wholly available for the remaining companies as per research requirement. Two separate models were run and the results determined that there exists a positive relationship of corporate dividend policy and retained earnings with stock price volatility.

Keywords: cash dividend policy, stock price volatility, Pakistan

Introduction

In the history of corporate finance, only a few topics have remained ambiguous but important simultaneously. One such topic is the impact of corporate dividend disbursement policy on market stock price volatility and many studies have been conducted to investigate it accordingly (Nazir, [2012](#)). It has been suggested that managers should pay dividends open-heartedly because stock returns are not enhanced by retained earnings (Javed & Shah, [2015](#)). It is evident that the corporate dividend disbursement policy does effect the movement of share prices in the stock market, thus

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causing volatility in the market share prices of the firms. Indeed, the more influence this policy has the more it is important to the investor (Ajayi & Seyingbo, [2015](#)). Dividends are basically a division of the earnings of a company which should be divided into two portions: one needs to be disbursed and the other needs to be retained (Hashemijoo et al., [2012](#)).

Advancements in the dividend policy go hand in hand with corporate development. It has been concluded that change in financial markets drives the dividend policy. There are several debates as whether to disburse dividends at 100% dividend payout ratio or to retain the earnings at 100%. Moreover, if it is needed to avail both of these options, then it may lead to an optimal dividend decision resulting in the end effect of a firm's value and shareholders' return on investment. Throughout the preceding years, researchers have attempted to design an optimal dividend policy for firms. Yet, none of the proposed theories are universally accepted. However, over the last few decades, several theories have emerged which explain the effects of the dividend policy of firms on the market value of their stocks (Al-Hasan et al., [2013](#)).

Finance managers are usually required to take three main decisions. The first decision is about investment and capital budgeting. The second decision is the dividend payout decision. Whereas, the third and the last important decision they need to take is the financing decision, that is, how a firm's assets are to be financed. Dividend payout decision usually needs to be taken when a firm starts generating profits. Once it has generated profit, it needs to be decided whether it should distribute it all, or should it retain some portion of it for future investment, or should it invest the profit wholly back into the business? The answer is simple. The managers should focus on the wealth maximization of shareholders but should also contemplate the influence of their decisions on share prices in the stock market (Ahmad & Naz, [2015](#)).

The financial worth of corporations mainly depends on their earnings, which ultimately are an outcome of their investment policies. However, this argument is against the assumption of Walter and Gordon, that is, the dividend relevance theory which says that the dividend announcement of a firm mainly depends on the available opportunities for investing in the future. Furthermore, it also depends on the association among the internal rate of return and weighted average cost of the capital (Ajayi & Seyingbo, [2015](#)).

Stock price is the value of a single share of stock in the stock market. Market share prices help the investors to decide whether or not they should invest in a specific stock (Saleem et al., [2013](#)). Every private investor invests with the motive of earning profit and growth in investments. For a company that is listed on the stock exchange, there are many causes which exist and affect the shareholders' wealth. Out of the many factors, studies suggest that the variables which mostly affect stock prices include earnings per share, return on stockholders' equity, retention ratio, and earnings after tax and dividend yield.

Furthermore, out of all the variables which affect stock market prices, there is a noteworthy effect of dividends on market share prices of the company (Majanga, [2015](#)). There was found a significant positive association among the announcement of dividends and volatility in the share prices of companies in the banking sector of Bangladesh (Masum, [2014](#)). Since dividend policy is related to earnings, so it is simultaneously related to the capital structure of the organization. When earnings are retained, they affect the capital structure of the firm as well, if not distributed in the right proportion. The reason behind the close association of dividend policy and capital structure is that both directly affect the shareholders' wealth (Hashemijoo et al., [2012](#)).

For a company, it remains important to decide and implement a suitable corporate dividend policy. It would give them the flexibility to invest in future projects (Oyinlola & Ajeigbe, [2014](#)). Dividend policy represents the company policy regarding the disbursement of dividends and the retained amount of earnings for making future reinvestments. Some of the decisions answer the core question that whether the earnings should be distributed or not. In order to answer this question, managers should be able to decide which dividend policy may lead to stockholders' wealth maximization. By considering shareholder wealth, they would be considering the effect of dividend policy on the stock prices of the firm (Hashemijoo et al., [2012](#)).

In Pakistan, insufficient investigation has been conducted to establish the link among corporate dividend policy, retained earnings, and share price volatility. The current study attempts to discover the relationship of corporate dividend policy and retained earnings with share price volatility. Although, this area has been covered by many researchers in developed countries; still, sufficient number of studies haven't been carried out by the researchers in emerging economies around the world including Pakistan

(Nazir et al., [2012](#)). Furthermore, Pakistan Stock Exchange (PSX) is a high-risk market where the investors want high return. There are only a few studies available which covered the long-term behavior of stocks and very little work has been conducted on the relationship between dividend payout and stock prices (Sadiq et al., [2013](#)).

Therefore, the prime objective of this study is to evaluate the impact of corporate dividend policy and retained earnings on market share price volatility of companies listed on PSX (Al-Hasan et al., [2013](#)). The sub-objectives intend to examine the relationship which exists between corporate dividend policy and stock market price, to discover the association between retained earnings and stock market price, to help the investor to invest in the most appropriate way, to help the Government of Pakistan to amend the policy in order to promote economic activities, and to help companies to devise their corporate dividend policy to attract investors.

This study is conducted in the Pakistani context. The results would allow the authors to determine the actual relationship between the study variables. The findings would put the investors in a much better condition to make an optimum decision based on their interest. As a result, it would boost their confidence to invest in PSX listed companies. Moreover, the decision-makers of such firms can optimize their decisions to attract the maximum number of investors towards their firms.

Literature Review

Commonly, researchers classify dividend approaches into three types. The first approach is based on the premise that the dividend policy directly increases a firm's value. The second approach contradicts the first approach by stating that the dividend policy affects a firm negatively. The third approach denies any association between the dividend policy and firm value, either positive or negative. All these approaches were studied in certain periods of time and authenticated (Manos, [2001](#)). The level of effect created by cash dividends was found to be higher on stock prices as compared to the effect of retained earnings on these prices, as contrast with the study conducted by (Gordon, [1959](#)).

Dividend is the means through which a company distributes its earnings to its shareholders. There are many ways to distribute earnings, for instance, in the form of bonus shares or cash. There are occasions when companies

decide to pay additional dividends, other than the regular cash dividend. Moreover, there are companies which pay dividend annually, semi-annually, or quarterly (Hooi et al., [2015](#)).

There are different theories associated with the dividend policy. In the dividend irrelevance theory, there are no agency issues among shareholders and managers of the firm. Also, the stocks are fairly priced. Furthermore, the shareholders are least concerned with the dividend policy, since they may sell their part of equities portfolio if they need cash (Hooi et al., [2015](#); Miller & Modigliani, [1961](#)). The bird in hand theory states that capital gains remain uncertain as compared to dividends. Hence, the investors have imperfect evidence related to the firm's profitability. Consequently, they may be inclined towards cash dividends as compared to the uncertainty of capital gains at a later stage (Bhattacharya, [1979](#); Hooi et al., [2015](#)). According to the agency theory, the management often overinvests in different projects to enhance the firm size. Since firm size determines their compensation, there arises a conflict of interest among the management and shareholders (Al-Malkawi et al., [2010](#); Hooi et al., [2015](#)). Whereas, according to the signaling theory, some investors take dividend announcement as a signal that the firm has strong prospects and payouts in the form of dividends indicate these prospects (Al-Malkawi et al., [2010](#); Hooi et al., [2015](#)).

Dividend policy effectively indicates the market value of companies in the Pakistani market, where earnings and price volatility have a positive relationship (Nazir, [2012](#)). Contrarily, there is a negative relationship between share price volatility and firm size. Moreover, stock price volatility is the most affected by dividend yield and size (Hashemijoo et al., [2012](#)). A study showed a negative association between stock price volatility and dividend payout. On the other hand, the relationship of stock price volatility with dividend yield was found to be positive and strong (Al-shawawreh, [2014](#)). Return on equity and earnings per share were found to have an encouraging relationship with share value, whereas profit after tax (PAT) was found to have a negative relationship with share value in the Bangladeshi stock market and more specifically, the listed commercial banks of Bangladesh (Masum, [2014](#)).

Firm managers need to decide which dividend policy they need to adopt, that is, how much profit they need to distribute among their shareholders. The distribution of profit needs to be seen from two different aspects. On

the one hand, the distribution of profit in the form of dividends affects investment. On the other hand, stockholders wait for dividend disbursement in cash form. So, the managers of the firms should maintain a balance between availing investment opportunities and dividend payout (Irandoost et al., [2013](#)). It has been suggested that the announcement of dividend by banks affects the market price of shares, whereas retained earnings causes less volatility in banks of Nigeria. Furthermore, banks should retain all earnings and make use of them, whereas investors should focus on capital gains as return on their investment, rather than dividend collection (Ajayi & Seyingbo, [2015](#)).

The relationship between market share price volatility and the dividend policy of a firm has been debated for several years. Some of the factors which influence the dividend policy include long-term debt, whereas age and size have been used as control variables (Hooi et al., [2015](#)). There are mix evidences in favor or against the existence of this relationship. Many scholars are of the view that there exists a relationship between the corporate dividend policy and market share price volatility, while others deny its existence. As of the signaling theory, dividend signifies to the stockholders that the company is working so effectively that it is able to distribute the earnings among its shareholders (Hashemijoo et al., [2012](#)).

The volatility level of the shares indicates the risk which the investors are exposed to. Investors have a keen eye for both dividends and volatility, even the companies are well aware of this fact. This makes share price volatility an important issue (Hussainey et al., [2010](#)). Dividend policy is important and equally consider by investors, firm management, and policymakers. Investors are not only concerned about return on stocks but also evaluate a firm's future growth prospects at the same time by examining its dividend policy. Dividends not only signify profit for investors but also signal the markets regarding firm performance. This is why policymakers for any organization have a critical responsibility to make a suitable dividend policy (Ahmad & Naz, [2015](#)).

According to the literature, there exists a negative association of market value volatility with dividend yield and size, whereas a negative association between leverage and stock price volatility (Profilet & Bacon, [2013](#)). On the other hand, Harkavy ([1953](#)) investigated the association between retained earnings and stock prices and the results were quite surprising, showing that the firms which have higher retained earnings also have higher

stock prices. Moreover, Hancock ([1977](#)) investigated the association between stock prices, dividend yield, and taxes. The results showed a significant and direct connection between dividend yield and stock prices. Similarly, Jordanian firms were analyzed to know the association between cash dividends, stock prices, and retained earnings and a direct relationship between them was found (Friend & Puckett, [1964](#); Gordon, [1959](#); Naamon, [1989](#)). Furthermore, a significant positive relationship was explored between stock prices and cash dividends (Marsh & Power, [1999](#)).

It has been suggested that the share price of a firm is determined by its dividend and retained earnings. Moreover, the dividend payout theory is stronger in case of mature firms in terms of retained earnings. While, in the case of firms which are still growing, the retained earnings hypothesis dominates the dividend hypothesis; the reason being these firms have more investment opportunities. It has been observed that more cash is retained by growing firms as compared to the distribution of dividend. For a firm that is still growing, the bird in hand theory is not applicable. Whereas, the firms which are already grown up and mature have surplus cash available with them to distribute as dividend after retaining some portion of the income. Although, the bird in hand theory is truly applicable for mature firms where dividend hypothesis dominates over retained earnings (Ahmad & Naz, [2015](#)).

Similarly, a significant correlation exists between stock price volatility and dividend yield (Asghar et al., [2011](#)). It is evident that dividend policy has a positive relationship with stock prices (Murhadi, [2008](#)). Firms which pay dividend give their investors the benefit of having stocks which can be easily liquidated, as compared to the firms which don't pay dividend. So, the liquidity of stock is positively related to the firm being a dividend payer (Igan et al., [2010](#)). The firms which are larger in size and have fewer growth opportunities have the potential to pay dividend to their shareholders, although a significant decline over the years has been observed in payout ratios of the firms (Fatemi & Bildik, [2012](#)).

A research conducted in Nigeria showed a positive association between the performance of firms and dividend payouts (Uwuigbe et al., [2012](#)). Furthermore, it was concluded that improved firm performance is depicted by dividend yield (Henne et al., [2007](#)). Out of all theories about dividend policies, the bird in hand theory has the highest level of acceptance among scholars and practitioners alike. Analysis has shown that share prices have

declined in the US stock market on the announcements of dividend payouts since 1978 (Amihud & Li, [2002](#)). Similarly, empirical analysis points towards an indirect association of dividend policy (as dividend yield and dividend payout) with share price volatility (Hashemijoo et al., [2012](#)).

Theoretical Framework

Dividend policy basically decides the percentage of profit a firm retains or distributes among its shareholders based on their shareholding. The crucial decision remains at the discretion of the directors. The pricing of stocks in the stock exchange market is based on the principle of demand and supply. Hence, when the demand for stocks is increased the price may increase and when it is decreased, the price may also decrease. When stocks are held by existing stockholders with a future expectation of return, then stock prices increase for both the existing and potential stockholders. This is because investors are mostly concerned with the returns from their stocks in the form of dividends (Barfield, [1995](#)).

Many factors affect stock prices. A study conducted on the firms of Bahrain revealed that a number of factors affect the stock price movements. Some of these factors include return on investment (ROE), price earnings, dividend yield, per share dividend distributed, and firm size. Out of all the factors that affect stock prices, dividend is considered as an important factor. This study concluded that dividend cannot be ruled out as a determinant of stock prices in the Bahrain Stock Market (Sharif et al., [2015](#)).

Another analysis of the listed firms of New York Stock Exchange (NSE) concluded that stock price movements occur due to investor reaction towards dividend announcement by the firms, since investors' sentiments are significantly related to by stock price movements. Therefore, stockholders are the most influencer of stock prices in the stock exchange market (Julius et al., [2011](#)). A similar study was conducted on the listed firms of the stock exchange of Germany. It was found that an increased dividend announcement excites stockholders and it results in the movement of stock prices (Andres et al., [2011](#)).

The consequences of dividend announcement strategy for share price volatility have been discussed for many years by several researchers, such as Gordon ([1959](#)) and Baskin ([1989](#)). It was found that investors are of the view that future income in the form of capital gain is uncertain, therefore, they are more interested in dividends rather than capital gains. So, the

results showed that investors do appreciate dividends (Al-Malkawi, [2007](#)). A research was conducted to differentiate between the effects of retained earnings and dividends on the market prices of stocks. The results showed that dividends have a greater effect on stock prices as compared to retained earnings (Friend & Puckett, [1964](#)). Another research was conducted to understand the nature of the existing relationship between stock prices, taxes, and dividend yield. The results showed that there is a highly significant and positive relationship between stock prices and dividend yield (Litzenberger & Ramaswamy, [1979](#)). A similar study was conducted to establish the relationship between cash dividends and earnings that are not distributed, that is, retained earnings. The results showed that market stock prices are affected by cash dividends and retained earnings (Nishat, [1992](#)).

An investigation was conducted to know the effect of change in dividends in accordance with market stock prices. It was determined that whenever a large dividend is announced, the response or the movement of stock prices remains positive (Dhillon & Johnson, [1994](#)). Moreover, a relationship among retained earnings, market stock prices, and dividend was found (MacDonald & Power, [1995](#)). Another research was conducted in Nepal. The results informed that market stock prices are determined by cash dividend disbursements and retained earnings (Azhagaiah & Sabari, [2008](#)). The impact of cash dividend announcements on market stock prices was assessed and evaluated and the results showed a positive relationship (Chen et al., [2009](#)). Based on the above theoretical discussion, the following two hypotheses were developed:

H1: There is a significant positive relationship between share price volatility in the stock market and corporate dividend policy.

H2: There is a significant positive relationship between share price volatility in the stock market and retained earnings.

Methodology

In the current study, the data of fifty (50) companies from the non-financial sectors of Pakistan that are listed on PSX was collected for a period of eight (08) years (2010 to 2018). Quantitative data was collected from their annual reports. SPSS, Eviews, and Microsoft Office were used for data analysis to discover the relationship of market stock price volatility with corporate dividend policy and retained earnings. Before conducting regression

analysis, a diagnostic test of OLS assumptions, which are named as multicollinearity, auto correlation, and normality (Ilaboya & Aggreh, [2013](#)). Table 1 below indicates the sampled firms and the categories they belong to.

Table 1
Categories of Companies Selected

Category	Total Number of Firms Listed on PSX	Firms Selected for the Current Study
Automobile	15	10
Chemicals	16	7
Energy	8	8
Fertilizers	6	4
Pharmaceuticals	9	6
Textile	21	15
Total	75	50

In the first stage, 8-year data of seventy-five (75) companies was collected. Moreover, twenty-five (25) firms were excluded from this research for which data was not available for all the years, that is, 2010-2018. For the current study, stock price volatility is the dependent variable, whereas dividend yield, dividend payout ratio, and retained earnings are independent variables. Furthermore, leverage, asset growth, size, and earnings volatility were introduced as control variables (Nazir et al., [2012](#)).

Stock price volatility basically measures responsiveness in the form of change in stock prices and this change shows the risk associated with that particular stock. It is calculated as the difference between the highest and the lowest stock price during the year, divided by their average and in the end taking square of it (Nazir et al., [2012](#); Profilet et al., [2013](#); Ajayi & Seyingbo, [2015](#); Sadiq et al., [2013](#); Habib et al., [2012](#)). Dividend yield is defined as the dividend distributed by the company in the form of cash to stockholders in relation to the average market stock price of the firm (Masum, [2014](#); Nazir, [2012](#); Profilet et al., [2013](#); Ajayi & Seyingbo, [2015](#); Saleem et al., [2013](#); Sadiq et al., [2013](#)).

Payout ratio is calculated by dividing the total cash dividend by the total earning of every stock (Nazir et al., [2012](#); Profilet et al., [2013](#); Ajayi & Seyingbo, [2015](#); Saleem et al., [2013](#); Sadiq et al., [2013](#); Habib et al., [2012](#)). Retention ratio, as a proxy of retained earnings, is calculated by deducting total dividends from total earnings and then dividing the resultant value with the earnings (Masum, [2014](#); Majanga, [2015](#)). Leverage is the ratio of long-term debts (debts which are due only after one year) to the total assets of the firm. It can also affect stock price volatility (Nazir et al., [2012](#); Profilet, [2013](#)).

Asset growth is considered as a control variable. It is calculated by taking the difference of the closing and opening values of the assets of the current year. The resultant value is then divided by the previous year's total assets (Nazir et al., [2012](#); Profilet, [2013](#); Sadiq et al., [2013](#)). Companies which are bigger in size are more diversified with respect to the risk they face, whereas the firms which are smaller in size are more exposed to the risk because of the volatility and limited liquidity of their stock. Size calculated as the natural logarithm of the average market value of the common stock, size is calculated by multiplying the number of shares in the market with the number of shares issued and then taking base 10 logarithm (Ajayi & Seyingbo, [2015](#); Al-shawawreh, [2014](#); Habib et al., [2012](#); Hussainey et al., [2010](#); Irandoost et al., [2013](#); Nazir, [2012](#)). Earnings volatility is introduced for the special purpose of limiting the effect of any change in earnings on stock price volatility. It is represented by "Evol" and calculated in the current study by taking the moving standard deviation of the net earnings of companies. Earnings volatility is a control variable in the current study (Ajayi & Seyingbo, [2015](#); Habib et al., [2012](#); Nazir et al., [2012](#)).

Followings models were developed based on the research objectives of the current study.

$$\text{Model 1: } Pvol = \alpha + \beta_1 DY_{it} + \beta_2 DPR_{it} + \beta_3 Size_{it} + \beta_4 Lev_{it} + \beta_5 Asset\ Growth_{it} + \beta_6 Evol_{it} + \epsilon$$

$$\text{Model 2: } Pvol = \alpha + \beta_1 RETRAT + \beta_2 Size_{it} + \beta_3 Lev_{it} + \beta_4 Asset\ Growth_{it} + \beta_5 Evol_{it} + \epsilon$$

where,

PVOL= Price Earnings Volatility

DY= Dividend Yields

DPR= Dividends Payout Ratio

SIZ = Size of the firm

LEV = Leverage of the firm

Growth = Asset growth of the firm

RETRAT = Retention Ratio

ASGR = Asset Growth

EARVOL = Earnings Volatility

Results and Discussion

Initially, data normality test, multicollinearity test, Pearson correlation test, heteroscedasticity test, and stationarity test of both models were performed and no issues were found in the data. Since the data was penal data, so fixed and random effects models were used. In this study, Hausman test is used to differentiate between the fixed effects model and the random effects model, to decide which one should be used for regression analysis. If p -value is more than 0.05, then the null hypothesis is rejected, which implicates that the random effects model is rejected. Whereas, if p -value is less than 0.05, then the null hypothesis is accepted, which implicates that the fixed effect model is rejected.

Table 2

Hausman Test for First Model

Correlated Random Effects – Hausman Test			
Test Summary	Chi-Sq. Statistic	Chi-Sq. df.	Prob.
	33.4975	6	0.00
Comparison of Period Random Effects Test			
Variable	Fixed	Random	Prob.
DPR	-0.1237	-0.1362	0.179
DY	-0.7954	-0.7345	0.3197
ASGR	-0.0312	-0.0018	0.0444

Variable	Fixed	Random	Prob.	
EARVOL	1.58769	1.67684	0.001	
LEV	-0.1509	-0.1503	0.8004	
SIZ	-0.0766	-0.0848	0.1291	
Period Random Effects Test Equation				
Variable	Coefficient	Std. Error	<i>t</i> -Statistic	Prob.
C	0.53609	0.06231	8.60342	0.00
DPR	-0.1237	0.06879	-1.7983	0.0729
DY	-0.7954	0.29461	-2.6998	0.0072
ASGR	-0.0312	0.07985	-0.3904	0.6965
EARVOL	1.58769	0.42676	3.7203	0.0002
LEV	-0.1509	0.05247	-2.8771	0.0042
SIZ	-0.0766	0.02074	-3.6956	0.0003
Effects Specification				
R^2	0.20006	Mean dependent var	0.41589	
Adjusted R^2	0.17312	<i>S.D.</i> Dependent var	0.2623	
F -statistic	7.42582	Durbin-Watson stat	1.83842	
Prob (F -statistic)	0			

Table 2 shows that the *p*-value is less than .05. So, the null hypothesis was rejected and the fixed effect model was used for the purpose of analysis.

Both of the main independent variables show significant results, that is, DPR is 7.29%, whereas DY is 0.07% at 10% level of significance. All the control variables except ASGR are also significantly positive. These results are consistent with the literature and the latest studies. Hence, the first hypothesis is accepted as there exists a significant positive relationship between the corporate dividend policy and stock price volatility. These results are consistent with the findings of AlTroudi and Milhem (2013) and Masum (2014).

Table 3
Fixed Effect Model for the First Model

Dependent Variable: SPV				
Method: Panel Least Squares				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DPR	-0.123709	0.068792	-1.798324	0.0729
DY	-0.795412	0.294614	-2.699844	0.0072
ASGR	-0.031175	0.079852	-0.390406	0.6965
EARVOL	1.587689	0.426764	3.720301	0.0002
LEV	-0.150947	0.052465	-2.877117	0.0042
SIZ	-0.076647	0.02074	-3.695556	0.0003
C	0.536087	0.062311	8.603415	0
Effects Specification				
Period Fixed (Dummy Variables)				
R^2	0.200059	Mean dependent var		0.415894
Adjusted R^2	0.173118	S.D. dependent var		0.2623
F-statistic	7.425823	Durbin-Watson stat		1.838419
Prob (F-statistic)	0			

Hausman Specification Test-Second Model: In this model, the relationship of retention ratio (as a proxy of retained earnings) with stock price volatility is checked, whereas size, leverage, asset growth, and earnings volatility remain the control variables. Firstly, Hausman test is performed to know that whether the fixed effect model or the random effects model needs to be run. Since the data was panel data, Hausman Test was performed to differentiate between the fixed effects and random effects model to know which one should be used for regression analysis. If p -value is greater than 0.05, then the null hypothesis is rejected, that is, the random

effects model is rejected. On the other hand, if p -value is less than 0.05 then the null hypothesis is accepted and random effect model is used.

Table 4

Hausman Test for the Second Model

Correlated Random Effects - Hausman Test				
Test period random effects				
Test Summary	Chi-Sq. Statistic		Chi-Sq. <i>df</i> .	Prob.
Period random	10.2422		5	0.0687
Period Random Effects Test Comparisons				
Variable	Fixed	Random	Var (Diff.)	Prob.
RETRAT	0.09886	0.09531	9E-06	0.2326
ASGR	-0.0325	-0.0233	7.9E-05	0.3013
EARVOL	1.60179	1.63205	0.00027	0.0658
LEV	-0.1581	-0.1579	3E-06	0.9169
SIZ	-0.0801	-0.0831	0.00001	0.3316
Period Random Effects Test Equation				
Dependent Variable: SPV				
Method: Panel Least Squares				
C	0.40454	0.06863	5.89453	0
Variable	Fixed	Random	Var (Diff.)	Prob.
RETRAT	0.09886	0.03095	3.19392	0.0015
ASGR	-0.0325	0.08055	-0.4033	0.687
EARVOL	1.60179	0.43193	3.70846	0.0002
LEV	-0.1581	0.05307	-2.9791	0.0031
SIZ	-0.0801	0.02128	-3.7652	0.0002

Effects Specification			
Period Fixed (Dummy Variables)			
R^2	0.17823	Mean dependent var	0.41589
Adjusted R^2	0.15275	S.D. dependent var	0.2623
F -statistic	6.99452	Durbin-Watson stat	1.80885
Prob (F -statistic)	0.00		

As per the results of Hausman test with respect to the second model, the value of probability is 6.8% which is more than 5%. So, the null hypothesis is rejected

Table 5
Random Effect for the Second Model

Dependent Variable: SPV				
Method: Panel EGLS (Period Random Effects)				
Swamy and Arora Estimator of Component Variances				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
RETRAT	0.09531	0.03081	3.09357	0.0021
ASGR	-0.0233	0.08006	-0.291	0.7712
EARVOL	1.63205	0.43162	3.78126	0.0002
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LEV	-0.1579	0.05304	-2.9773	0.0031
SIZ	-0.0831	0.02105	-3.9482	0.0001
C	0.4096	0.07029	5.82708	0

Weighted Statistics			
R^2	0.10571	Mean dependent var	0.2466
Adjusted R^2	0.09436	S.D. dependent var	0.25539
F -statistic	9.31414	Durbin-Watson stat	1.82727
Prob (F -statistic)	0.00		

The above results show that there is a significant and positive relationship between SPV and RETRAT, whereas all control variables also have a positive and significant relationship with SPV except ASGR. Hence, there exists a significant and positive relationship between retained earnings and stock price volatility, which proves the second hypothesis that establishes a relationship between stock price volatility and retained earnings. The results are also consistent with the findings of Masum (2014) and Oyinlola and Ajeigbe (2014).

It becomes evident after the statistical analysis that there exists a significant and positive relationship of retained earnings and corporate dividend policy with stock price volatility. Hence, both hypotheses are accepted. As far as sub objectives are concerned, the first and the second sub objectives have been achieved. Furthermore, the fourth objective is discussed in detail and it has helped to conclude the results. Whereas, the third objective is also achieved.

Conclusion

It is explicit from the results that a significant and positive relationship between corporate dividend policy, retained earnings, and stock price volatility exists. Hence, both hypotheses were accepted. It was found that any change in corporate dividend policy or retained earnings impact stock price volatility and investors are keen to observe these changes. This supports the signaling theory which expounds that dividend announcement is an indication that the firm has positive future prospects. These results are consistent with earlier studies, although this study aimed to fill the gap by covering all firms which other researches were unable to cover in that particular period of time. The corporate dividend policy has a significant impact which causes share price volatility and, in turn, economic activity is

generated. The firms which distribute dividends have volatile share prices and thus they attract investors. So, other firms can amend their corporate dividend policy to attract investors. Whereas, the government can introduce the policy of tax rebates and thus can increase the volume of tax collection. Besides, some funds can also be made available for the investors which they can use on easy terms and conditions for investment purposes.

This study would help investors to better comprehend the factors which affect stock price volatility and to invest more appropriately. The government can improve its policies to attract more investors around the world. Since the findings of this study support the signaling theory, they can also help the government along with the investors to understand the financial performance of firms. Hence, the investors can better invest in stock exchange as this study would assist them to analyze the relationship between corporate dividend policy, retained earnings, and stock price volatility. Also, these factors affecting the stock prices to change. The Government of Pakistan can amend the policies to promote investment in stock exchange which would, in turn, generate revenue and economic growth.

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